UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/828,202	04/09/2001	Jia-Horng Shieh	ACR0025-US	3672

28970 7590 11/03/2004	EXAMINER
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ART UNIT	PAPER NUMBER
2133	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/828,202	SHIEH, JIA-HORNG
	Examiner	Art Unit	
	Esaw T Abraham	2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _13 September 2004_.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-20_ is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☒ Claim(s) _13-20_ is/are allowed.
6) ☒ Claim(s) _1-12_ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on _09 April 2001_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to the applicant's amendments

******** The examiner accepts amended claims 1, 5, 7 and 11.

******** The corrected or substituted specification was received on 07/12/04. The specification

is accepted.

Response to the applicant's argument

Applicant's argument with respect to amended claims **1, 5, 7 and 11** filled on 07/12/04

have been fully considered but they are not persuasive.

The applicant argues that both of the said PI syndrome and said PO syndrome are

generated before the ECC decoder performs the error correction decoding. However, the

applicant's admitted prior art teaches that referring to figure 3, a flow chart of decoding RS code

in a conventional ECC decoder and at stage 301, original code words in the data buffer (106)

enter the stage of syndrome generation, wherein an ECC decoder (114) calculates the PI

syndrome or the PO syndrome (see page 2 lines 49-52 of the disclose). Therefore, the applicants'

argument although acknowledged, has not been found to be convincing.

DETAILED ACTION

1.   Claims **1 to 12** are presented for examination.

Claims 13-20 have been allowed in the previous first non-final action.

Drawings

2.   The **drawings** are objected to because figures 1-3 should be designated by a legend such

as – **prior art-** in order to clarify what is applicant's invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section

102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject

matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to

which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness
        or nonobviousness.

3.   Claims **1-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants'

admitted prior art (hereinafter admitted prior art) in view of Iwasa (U.S. PN: 6,470,473).

As per claims **1 and 7-9,** the applicant's submitted prior art's figure 1 disclosed a

conventional decoding system in a DVD storage system includes, a demodulator (see element

102) reads data and the data stored in the disk (see element 100) whereby the demodulator

generates an ECC block (see element 107) and transmits to a data buffer (see element 106)

wherein the ECC block comprises main data, PI (parity inner code), PO (parity outer code).

Further, the applicant's submitted prior art teach that the main data append with PO to form an

outer code RS (Reed-Solomon) and the RS append with PO and PI to form an inner code RS

(Reed-Solomon), an ECC decoder reads the ECC block form the data buffer to form the error

correction decoding along the PI direction and the PO direction of the ECC block, and a de-

scrambling and EDC check reads corrected data stored in the data buffer for de-scrambling the

main data and checking errors (see the applicants' disclosure page 1, lines 14-29). Furthermore,

the applicants' submitted prior art teaches that when a host needs the main data an ATAPI (see

element 118) reads the main data in the data buffer (see the applicants' disclosure page 1, lines

14-29). The applicants' submitted prior art did not **explicitly** teach a syndrome generator for

generating PI syndrome and PO syndrome and a memory coupled to the syndrome generator for

storing PO syndrome. **However,** Iwasa in an analogous art disclose a DVD data decoding

processing system (see figure 3, reference number 30) includes a DVD reproducing unit (see

element 32) and a buffer memory (see element 34) whereby the DVD reproducing unit includes

a demodulating unit (see element 36) coupled to a PI syndrome generating unit (see element 38),

an error correcting unit (see element 40), a PI syndrome storing memory (see element 48), a

buffer memory (see element 42) having a memory capacity corresponding to a few lines, a PO

syndrome generating unit (see element 44), a de-scrambling/EDC calculating part (see element

46), a PO syndrome storing memory (see element 50), an EDC calculation result storing memory

(see element 52) and an error correcting part (see element 54), which are coupled as shown.

Therefore, it would have been obvious to a person having an ordinary skill in the art at the time

the invention was made to combine (incorporate) the teachings of the applicant's prior art with

the PI/PO syndrome generators including the memory (PO syndrome storing memory) for

storing and calculating PO syndromes. **This modification** would have been obvious because a person having ordinary skill in the art would have been motivated to do so because it would be relatively high reliable in operation that results facilitating utilization of flexible and efficient memory configurations.

As per claims **2 and 3,** the admitted prior art in view of Iwasa teach all the subject matter claimed including Iwasa in figure 3 teach an ECC decoder or ECC unit (see fig. 3, element 40) connected to PI syndrome storing memory (see element 48) and PO syndrome storing memory (see element 50) to store PI and PO syndromes.

As per claims **4 and 10,** the admitted prior art in view of Iwasa teach all the subject matter claimed including a demodulator (see fig. 3, element 36) receives data read out from a disk (see element 14) to demodulate the received data and to develop the modulated data (convert codes to symbols) in the buffer memory (see col. 1, lines 44-53).

As per claims **5 and 11,** the applicant's submitted prior art's figure 1 disclosed a conventional decoding system in a DVD storage system, a demodulator (see element 102) reads data and the data are stored in the disk (see element 100) whereby the demodulator generates an ECC block (see element 107) and transmits to a data buffer (see element 106) wherein the ECC block comprises main data, PI (parity inner code), PO (parity outer code). Further, the applicant's submitted prior art teach that the main data append with PO to form an outer code RS (Reed-Solomon) and the RS append with PO and PI to form an inner code RS (Reed-Solomon), an ECC decoder reads the ECC block form the data buffer to form the error correction decoding along the PI direction and the PO direction of the ECC block, and a de-scrambling and EDC check reads corrected data stored in the data buffer for de-scrambling the main data and checking

errors (see the applicants' disclosure page 1, lines 14-29). Furthermore, the applicant submitted

disclosure teaches that when a host needs the main data an ATAPI (see element 118) reads the

main data in the data buffer. The applicant's submitted prior art did not **explicitly** teach PI/PO

syndrome generators and transmitting PI syndrome to a data room and reading out PO syndrome.

However, Iwasa in an analogous art disclose a DVD data decoding processing system (see figure

3, reference number 30) includes a DVD reproducing unit (see element 32) and a buffer memory

(see element 34) whereby the DVD reproducing unit includes a demodulating unit (see element

36) coupled to a PI syndrome generating unit (see element 38), an error correcting unit (see

element 40), a PI syndrome storing memory (see element 48), a buffer memory (see element 42)

having a memory capacity corresponding to a few lines, a PO syndrome generating unit (see

element 44), a de-scrambling/EDC calculating part (see element 46), a PO syndrome storing

memory (see element 50), an EDC calculation result storing memory (see element 52) and an

error correcting part (see element 54), which are coupled as shown. **Therefore,** it would have

been obvious to a person having an ordinary skill in the art at the time the invention was made to

combine (incorporate) the teachings of the applicant's prior art with the PI/PO syndrome

generators including the memories (PI and PO syndrome storing memory) for storing and

calculating PI and PO syndromes. **This modification** would have been obvious because a person

having ordinary skill in the art would have been motivated to do so because it would be

relatively high reliable in operation that results facilitating utilization of flexible and efficient

memory configurations.

As per claims **6 and 12,** the admitted prior art in view of Iwasa teach all the subject

matter claimed including a demodulator (see fig. 3, element 36) receives data read out from a

disk (see element 14) to demodulate the received data and to develop the modulated data

(convert codes to symbols) in the buffer memory (see col. 1 lines 44-53).

Conclusion

4.   Any inquiry concerning this communication or earlier communication from the examiner

should be directed to Esaw Abraham whose telephone number is (703) 305-7743. The examiner

can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are successful, the examiner's supervisor,

Albert DeCady can be reached on (703) 305-9595. The fax phone numbers for the organization

where this application or proceeding is assigned are (703) 746-7239 for regular communications

and (703) 746-7238 for after final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

Esaw Abraham

Art unit: 2133

GUY J. LAMARRE
PRIMARY EXAMINER